

CONTENTS

Volume 29, Issue Nos 1-12 (2000)

EARTHQUAKE ENGINEERING AND STRUCTURAL DYNAMICS

Issue No. 1, JANUARY

| | |
|--|-----|
| A computational procedure for the implementation of equivalent linearization in finite element analysis: H. H. Emam, H. J. Pradlwarter and G. I. Schüller..... | 1 |
| Effect of stiffness variability on the response of isolated structures: H. W. Shenton III and E. S. Holloway | 19 |
| Compensation of time-delay for control of civil engineering structures: A. K. Agrawal and J. N. Yang | 37 |
| Modelling non-linear ground response of non-liquefiable soils: R. I. Borja, C-H. Lin, K. M. Sama and G. M. Masada..... | 63 |
| Effect of viscous, viscoplastic and friction damping on the response of seismic isolated structures: N. Makris and S-P. Chang | 85 |
| Predictive active control of MDOF structures: J. Gluck, Y. Ribakov and A. N. Dancigier | 109 |
| Designing tuned mass dampers via static output feedback: a numerical approach: W. E. Schmitendorf..... | 127 |

Issue No. 2, FEBRUARY

| | |
|--|-----|
| On the optimality criterion in structural control: A. Baratta and O. Corbi..... | 141 |
| Dynamic analysis of structures with Maxwell model: T. Hatada, T. Kobori, M. Ishida and N. Niwa..... | 159 |
| Effective location of active control devices for building vibrations caused by periodic excitation acting on intermediate storey: L-P. Xing, E. Tachibana and Y. Inoue | 177 |
| Reduction of pounding effects in elevated bridges during earthquakes: R. Jankowski, K. Wilde and Y. Fujino..... | 195 |

Indexed or abstracted by American Geological Institute; Applied Mechanics Reviews; Applied Science & Technology Abstracts (H. W. Wilson); Cambridge Scientific Abstracts; Current Contents®/Engineering, Computing & Technology (ISI); Earthquake Engineering Abstracts (NISEE); Ei COMPEX PLUS; Ei Page One; Environment Abstracts (CIS); Fluidex (Elsevier); GeoArchive (Geosystems); Geobase (Elsevier); Geological Abstracts (Elsevier); GeoRef; GeoSEARCH (Geosystems); Geotechnical Abstracts (Geotext Services); Geotitles: Geoarchaeology (Geosystems); Groundwater & Soil Contamination Database; Indian Society of Earthquake Technology Bulletin; International Bibliographies of Periodical Literature (IBR & IBZ); International Civil Engineering Abstracts (Anbar); International Petroleum Abstracts; ISI Alerting Services; Mechanics; Science Citation Index Expanded (also known as SciSearch®) (ISI); Science Citation Index® (ISI); Shock & Vibration Digest (Sage).

| | |
|--|-----|
| Seismic response of rotating machines-structure-RFBI systems: W-C. Su, A. G. Hernried and S. C. S. Yim | 213 |
| Control design for seismically excited buildings: sensor and actuator reliability: T. R. Alt, F. Jabbari and J. N. Yang..... | 241 |
| Asynchronous driving principle and its application to vibration control: Y-H. Zhang and Q-Z. Liang..... | 259 |

Issue No. 3, MARCH

| | |
|--|-----|
| The dynamic response of seabed anchored floating tunnels under seismic excitation: P. Fogazzi and F. Perotti | 273 |
| Dynamic analysis of sliding structures with unsynchronized support motions: Y-P. Wang and W-H. Liao..... | 297 |
| Sliding mode control of buildings with base-isolation hybrid protective system: B. Zhao, X. Lu, M. Wu and Z. Mei..... | 315 |
| Empirical formula for fundamental vibration periods of reinforced concrete buildings in Taiwan: L-L. Hong and W-L. Hwang | 327 |
| Empirical model for estimating Fourier amplitude spectra of ground acceleration in Taiwan region: V. Sokolov, C-H. Loh and K-L. Wen | 339 |
| Estimation of soil shear modulus softening during strong ground shaking using ground surface and downhole acceleration recordings: R. O. Davis | 359 |
| Passive and active control of three-dimensional buildings: Y. Arfiadi and M. N. S. Hadi..... | 377 |

Issue No. 4, APRIL

| | |
|---|-----|
| Parameters determination for a linearly inhomogeneous half-space using characteristics of the time-harmonic surface waves: G. B. Muravskii..... | 399 |
| Scattering of elastic waves by a 3D anisotropic basin: T. Zheng and M. Dravinski | 419 |
| A method for coupled arch dam-foundation-reservoir seismic behaviour analysis: R. J. Camara | 441 |

| | |
|---|------------|
| Seismic behaviour of asymmetric buildings with supplemental damping: R. K. Goel | 461 |
| Investigation of dynamic cable-deck interaction in a physical model of a cable-stayed bridge. Part I: modal analysis: E. Caetano, A. Cunha and C. A. Taylor | 481 |
| Investigation of dynamic cable-deck interaction in a physical model of a cable-stayed bridge. Part II: seismic response: E. Caetano, A. Cunha and C. A. Taylor | 499 |
| Correlating dynamic characteristics from field measurements and numerical analysis of a high-rise building: J. M. W. Brownjohn, T. C. Pan and X. Y. Deng..... | 523 |
| Nonlinear-Maxwell-element-type hysteretic control force: K. Yamada | 545 |

Issue No. 5, MAY

| | |
|--|------------|
| Seismic response control of frame structures using magnetorheological/electrorheological dampers: Y. L. Xu, W. L. Qu and J. M. Ko..... | 557 |
| Natural frequencies measured from ambient vibration response of the arch dam of Mauvoisin: G. R. Darbre, C. A. M. de Smet and C. Kraemer | 577 |
| Tuned liquid dampers for controlling earthquake response of structures: P. Banerji, M. Murudi, A. H. Shah and N. Popplewell | 587 |
| VFPI: an isolation device for aseismic design: M. Pranesh and R. Sinha | 603 |
| Forced vibration test of a building with semi-active damper system: N. Kurata, T. Kobori, M. Takahashi, T. Ishibashi, N. Niwa, J. Tagami and H. Midorikawa..... | 629 |
| Seismic response and damage analysis of buildings supported on flexible soils: M. E. Rodriguez and R. Montes..... | 647 |
| Flexural-torsional behaviour of steel reinforced concrete members subjected to repeat loading: H-L. Hsu and C-L. Wang | 667 |
| Seismically induced racking of tunnel linings: J. Penzien | 683 |
| Vibration of vertical rectangular plate in contact with water on one side: D. Zhou and Y. K. Cheung..... | 693 |
| Flexibility of superstructures and supports in the seismic analysis of simple bridges: F. Alfawakhiri and M. Bruneau | 711 |
| Dynamic investigation of a hybrid suspension and cable-stayed bridge: P. Paultre, J. Proulx and T. Bégin | 731 |
| BOOK REVIEW | 741 |
| BOOK RECEIVED | 742 |

Issue No. 6, JUNE

| | |
|--|-----|
| Time domain viscoelastic analysis of earth structures: N. Makris and J. Zhang..... | 745 |
| Shaking table 2-D models of a concrete gravity dam: D. W. Harris, N. Snorteland, T. Dolen and F. Travers | 769 |
| Dynamic loading test and simulation analysis of full-scale semi-active hydraulic damper for structural control: N. Niwa, T. Kobori, M. Takahashi, H. Midorikawa, N. Kurata and T. Mizuno | 789 |
| Characteristic of the vertical seismic waves associated with the 1995 Hyogo-ken Nanbu (Kobe), Japan earthquake estimated from the failure of the Daikai Underground Station: K. Uenishi and S. Sakurai | 813 |
| Simplification of strong ground motion considering inelastic responses of structures: Y. Sakai, T. Minami and T. Kabeyasawa | 823 |
| Seismic zoning for initial- and total-cost minimization: J. García-Pérez..... | 847 |
| Ground motion characteristics of the Chi-Chi earthquake of 21 September 1999: C-H. Loh, Z-K. Lee, T-C. Wu and S-Y. Peng | 867 |
| Discussion of the paper 'Multi-criteria optimal structural design under uncertainty by J. Beck, E. Chan, A. Irfanoglu and C. Papadimitriou': K. S. Pister, S. A. Mahin and I. Takewaki..... | 899 |
| Authors' reply to discussion of the paper 'Multi-criteria optimal structural design under uncertainty': J. L. Beck, E. Chan, A. Irfanoglu and C. Papadimitriou..... | 901 |

Issue No. 7, JULY

| | |
|--|------|
| Pseudo-dynamic testing with substructuring at the ELSA laboratory: P. Pegon and A. V. Pinto..... | 905 |
| Finite element model updating for structures with parametric constraints: Q. W. Zhang, C. C. Chang and T. Y. P. Chang..... | 927 |
| Implementation and testing of passive control devices based on shape memory alloys: M. Dolce, D. Cardone and R. Marnetto..... | 945 |
| Scaling of ductility and damage-based strength reduction factors for horizontal motions: A. K. Tiwari and V. K. Gupta..... | 969 |
| Design of friction damped structures using lateral force procedure: Y. Fu and S. Cherry..... | 989 |
| Digital simulation of multivariate earthquake ground motions: M. Di Paolo and M. Zingales | 1011 |

| | |
|--|------|
| A response spectrum approach for seismic performance evaluation of actively controlled structures: M. P. Singh, S. Singh and E. E. Matheu..... | 1029 |
| Structural upgrading strategy for electric power networks under seismic action: I. Vanzi | 1053 |
| CALL FOR PAPERS..... | 1075 |
| ERRATUM..... | 1076 |

Issue No. 8, AUGUST

| | |
|---|------|
| QN control method for building vibration caused by periodic excitation acting on intermediate story: L-P. Xing, E. Tachibana and Y. Inoue | 1079 |
| Parametric investigation of the stability of classical columns under harmonic and earthquake excitations: I. N. Pscharis, D. Y. Papastamatiou and A. P. Alexandris .. | 1093 |
| LQG control of lateral-torsional motion of Nanjing TV transmission tower: J-C. Wu and J. N. Yang | 1111 |
| Bayesian probabilistic damage detection of a reinforced-concrete bridge column: H. Sohn and K. H. Law | 1131 |
| Simplified seismic fragility analysis of structures with two types of friction devices: S. L. Dimova and K. Hirata..... | 1153 |
| Criteria for assessing dynamic collapse of elastoplastic structural systems: Y. Araki and K. D. Hjelmstad | 1177 |
| Control strategy for variable damping element considering near-future excitation influence: K. Yamada..... | 1199 |
| Stiffness-damping simultaneous identification using limited earthquake records: I. Takewaki and M. Nakamura | 1219 |
| Short Communication: Multifunctional vibration-absorption RC megaframe structures and their seismic responses: Z-J. Lan, X-D. Wang, H. Dai and S-T. Liang | 1239 |
| Discussion of the paper 'Effect of orthogonal inplane structural elements on inelastic torsional response by J. L. Humar and P. Kumar': A. Rutenberg | 1249 |
| Authors' reply to discussion of the paper 'Effect of orthogonal inplane structural elements on inelastic torsional response': J. L. Humar and P. Kumar..... | 1253 |
| BOOK REVIEW | 1255 |

Issue No. 9, SEPTEMBER

| | |
|--|------|
| Call for Papers: Special Issue on Performance-Based Earthquake Engineering | iii |
| The application of Karhunen-Loéve, or principal component analysis method, to study the non-linear seismic response of structures: E. Gutiérrez and J. M. Zaldívar | 1261 |
| Estimation of seismic drift demands for frame structures: A. Gupta and H. Krawinkler | 1287 |
| Design of dampers for structures based on optimal control theory: C.-H. Loh, P.-Y. Lin and N.-H. Chung | 1307 |
| Modeling of an actively braced full-scale building considering control-structure interaction: J.-C. Wu | 1325 |
| On the dynamic response of regular structures exhibiting tilt: A. Teran-Gilmore, H. Juárez and M. Frausto | 1343 |
| Linear dynamic modeling of a uni-axial servo-hydraulic shaking table system: J. P. Conte and T. L. Trombetti | 1375 |
| Performance of multiple tuned mass dampers for attenuating undesirable oscillations of structures under the ground acceleration: C. Li | 1405 |

Issue No. 10, OCTOBER

| | |
|---|------|
| Call for Papers: Special Issue on Performance-Based Earthquake Engineering | iii |
| Study on a new shear wall system with shaking table test and finite element analysis: X. Lu and X. Wu | 1425 |
| Establishing absorbed energy spectra—an attenuation approach: C.-C. Chou and C.-M. Uang | 1441 |
| Response spectral relationships for rock sites derived from the component attenuation model: N. Lam, J. Wilson, A. Chandler and G. Hutchinson | 1457 |
| Response spectrum modelling for rock sites in low and moderate seismicity regions combining velocity, displacement and acceleration predictions: N. Lam, J. Wilson, A. Chandler and G. Hutchinson | 1491 |
| A three-dimensional transmitting boundary formulated in Cartesian co-ordinate system for the dynamics of non-axisymmetric foundations: J. K. Kim, H. M. Koh, K. J. Kwon and J. S. Yi | 1527 |
| Non-linear seismic response of arch dams with contraction joint opening and joint reinforcements: C. Zhang, Y. Xu, G. Wang and F. Jin | 1547 |

Issue No. 11, NOVEMBER

| | |
|--|------|
| Call for Papers: Special Issue on Performance-Based Earthquake Engineering | iii |
| Seismic design methodology for friction damped braced frames: R. Levy, E. Marianchik, A. Rutenberg and F. Segal..... | 1569 |
| Sliding mode fuzzy control: Theory and verification on a benchmark structure: S. B. Kim and C. B. Yun..... | 1587 |
| Need of performance-based earthquake engineering in Taiwan: a lesson from the Chichi earthquake: Q. Xue | 1609 |
| Seismic structural control using a novel high-performance active mass driver system: Y.-P. Wang, C.-L. Lee and K.-M. Chen..... | 1629 |
| Modified sliding-mode bang-bang control for seismically excited linear structures: G.-P. Cai, J.-Z. Huang, F. Sun and C. Wang | 1647 |
| Wavelet-based non-stationary response analysis of a friction base-isolated structure: B. Basu and V. K. Gupta | 1659 |
| Performance-based design using structural optimization: S. Ganzerli, C. P. Pantelides and L. D. Reaveley | 1677 |
| Stiffened steel box columns. Part 1: Cyclic behaviour: H. Ge, S. Gao and T. Usami | 1691 |
| Stiffened steel box columns. Part 2: Ductility evaluation: T. Usami, S. Gao and H. Ge | 1707 |

Issue No. 12, DECEMBER

| | |
|---|------|
| Call for Papers: Special Issue on Performance-Based Earthquake Engineering | III |
| A macro-element model for inelastic building analysis: J. C. de la Llera, J. Vásquez, A. K. Chopra and J. L. Almazán..... | 1725 |
| Critical response of structures to multicomponent earthquake excitation: O. A. Lopez, A. K. Chopra and J. J. Hernandez | 1759 |
| Theoretical models and recorded response in the estimation of cumulative seismic damage on non-linear structures: E. Heredia-Zavoni, A. Zeballos and L. Esteva | 1779 |
| Modelling the out-of-plane seismic behaviour of masonry walls by rigid elements: S. Casolo..... | 1797 |
| Dynamic response of flexible retaining walls: A. H. Younan and A. S. Veletsos..... | 1815 |
| Evaluation of wind effects on a supertall building based on full-scale measurements: Q. S. Li, J. Q. Fang, A. P. Jeary, C. K. Wong and D. K. Liu | 1845 |
| AUTHOR INDEX | 1865 |
| KEY WORD INDEX | 1867 |